THE REJECTIONS UNDER 35 U.S.C. § 102

The Examiner has rejected claims 35 and 41 as anticipated by any one of the prior art references: Zimmerman et al., Simpson et al., Shimizu et al., or Clark et al.

Claims 35 and 41 have been amended to claim at least one transmitter which transmits a predetermined plurality of frequencies in a predetermined order and a processor which generates an output signal which controls the movement of the primary control element. The predetermined order of frequencies required before the actuation of the primary control element is utilized in order to prevent severe damage to the remote system and to insure the safety of the personnel operating the system. In an offshore drilling environment, for example, the transmission and receipt of signals at various frequencies is commonplace. Therefore, in order to prevent the actuation of the remote system by a spurious signal, the Applicant's invention requires not only a predetermined plurality of frequencies, but receipt of those frequencies in a predetermined order. As discussed below, none of the prior art references disclose a transmitter which transmits predetermined frequencies in a predetermined order nor do the prior art references utilize an output signal from a processor which controls the movement of the primary control element.

In the Clark reference, the operation of the telemetry system results in the transmission and receipt of laser beam pulses at one particular frequency when a condition occurs and the transmission and receipt of the laser beam pulses at another frequency in the absence of the condition. (Col. 3, Lines 6-27). While the transmitted frequencies may be predetermined, such as frequency "b" and frequency "d", the order or sequence of the transmitted frequencies are not predetermined. Additionally, the Clark reference discloses the use of a receiver installation comprising a collecting lens, a receiver, and a decoder for demodulating and recording of the telemetered information. (Col.

2, Lines 27-34). The reference fails to disclose the use of an output signal from a processor to control the movement of a control element.

The Zimmerman reference involves the use of an EEG system in the wireless transmission of brain activity data. Once an amplifier board amplifies the signals detected by electrodes placed upon the individuals scalp, the processor board digitizes the signals and converts them to a suitable form for transmission. (Col. 5, Lines 58-61). The transmitter board converts the signals into radio frequency signals for transmission. The serial data stream is delivered through an amplifier to an oscillator where the binary states of the digital signal are represented by two different frequencies. Additionally, the rate of frequency change of the oscillator may be selectively changed to meet other selected output requirements as well. (Col. 6, Lines 36-49). Therefore, the order of the transmitted frequencies representing the binary states is based upon the actual brain activity data and is not predetermined.

Unlike the Applicant's invention, the Zimmerman reference fails to disclose the use of an output signal to control the movement of the primary control element. The Zimmerman reference merely discloses the output of a data stream to a second communication interface where the data may be displayed or recorded. (Col. 7, Lines 52-58).

The Shimizu reference discloses the transmission of a plurality of frequencies which are representative of various dimensions of an object measured using vernier calipers. (Col. 2, Lines 27-52). The DC signal, generated with the use of a vernier caliper, is converted into a digital value. The data signal at a "0" level is modulated with a frequency F1 and the data signal at a "1" level is modulated with a frequency F2. The frequency-modulated data message, which includes signals modulated with frequency F1 and signals modulated at frequency F2 is then transmitted from the

transmitter. (Col. 7, Lines 67-68; Col. 8, Lines 1-7). Based upon the various dimensions measured, the transmitted frequencies will not be in any specific order.

Following transmission of the data message, a host computer compares the measured values with pre-programmed tolerances. If one of the measured dimensions is outside the programmed tolerance, a control circuit operates a buzzer and alarm lamp in order to notify the user that an error has occurred. (Col. 8, Lines 31-48). The control circuit does not control the movement of either control element.

The Simpson reference addresses a wireless digital voice-data communication system. The communication system consists of a base network control unit, a plurality of portable radio sets, and a plurality of radio ports consisting of digital transceiver. The base network control unit is able to generate a frequency hopping signal and the radio ports and portable sets can transmit and receive the frequency hopping signal. This frequency hopping signal allows for the operation of portable sets in presence of interfering signals while obtaining a high degree of privacy. The hop consists of a period of time spanning 880 bit times during which energy is transmitted in a fixed frequency band centered at f_k where $_k$ goes from one to seventy-seven. The distinguishing element between the applicant's invention and the Simpson reference is the applicant's use of a predetermined plurality of frequencies transmitted in a predetermined order in the movement of a control element and Simpson's use of a random plurality of frequencies. An example of the use of random frequencies in the Simpson reference occurs when one of the portable sets is energized. Upon energizing a portable set, the controller on the portable set will tune the frequency hopping receiver to one of the hopping frequencies. The receiver will remain tuned to the frequency for at least one hopping cycle. If no output signal from the detector has been received by the controller after one hopping cycle, the

controller will retune the receiver to a new frequency. (Col. 12, Lines 14-25). Additionally, when there is deterioration in the transmitted signal between the portable set and the radio ports, the control unit evaluates the degree of deterioration and, if necessary, automatically switches a portable set to a new transceiver to improve the reception. The control unit determines if the reception is better at a new transceiver, momentarily places the call on hold while the portable unit is instructed to retune its frequency hopping receiver and frequency hopping transmitter to the appropriate hop sequence. (Col. 14, Lines 49-68).

In view of the foregoing, allowance of the claims in the case is respectfully requested. The Examiner is invited to discuss this matter with Applicants' attorneys should any questions arise.

10/17/97
Date

Respectfully submitted,

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